



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200
Fax 613 632-5246

648.4713

Job Sheet 181459



M. J. DART
START UP
005595

M. J. DART
START UP
005595

Part No: 648.4713

Job Qty: 2 ea

Part Name: 8NR Overhaul



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 7/26/18

Job Tracking No:

Due Date: 9/26/18

Created By: Jesse White

Type: SOLD

Description:

Note: DWG O&OPM-8NRNR Rev. 2 IPP Rev. A 18.07.06 new issue DP Verify DD

Ship Via:

5116559

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	2 Ea		9/26/18	0.00	0.00	Start Up Small Fab-4		
110	Small Fab	2 pcs		9/26/18	0.00	0.00	Small Fab-3		
120	QC	2 pcs		9/26/18	0.00	0.00	QC5		
130	Packaging	2 pcs		9/26/18	0.00	0.00	Packaging3-1		
135	DC	2 pcs		9/26/18	0.00	0.00	DC		
140	QC21-FG	2 Ea		9/26/18	0.00	0.00	QC21		

Part Op 110 - Pack, bag and label

Descriptions: 130 - Identify and pack for shipping as per PPP 648.4713

135 - Photocopy bluefile & type labels per PPP 648.4713

7/10/18
DAS
38
9-28
OCT 09 2018
21
21
2-20

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
20NR-05P	Solenoid Locating Pin +	2 pcs (1 ea)	90-Start up Operation	SO 29458
20NR-06P	Solenoid Locating Pin +	2 pcs (1 ea)	90-Start up Operation	SO 29458 83920
8NR-13P	Rail Funnel Bolts +	8 pcs (4 ea)	90-Start up Operation	SO 29135
8NR-29P	Latch Pin Bushing +	4 pcs (2 ea)	90-Start up Operation	SO 29179
8NR-47P	Shoulder Bolt +	2 pcs (1 ea)	90-Start up Operation	SO 29431
8NR-51P	Nylock Nut for Shoulder Bolt +	2 pcs (1 ea)	90-Start up Operation	SO 29432
8NR-74P	Bolts +	8 pcs (4 ea)	90-Start up Operation	SO 29432 5115704
C10-9-2P	Latch Bearing +	2 Ea (1 ea)	90-Start up Operation	SO 93405
C2-14-2P	Label Rivets +	4 pcs (2 ea)	90-Start up Operation	SO 40061
C2-3-2-1P	Retaining Ring +	4 pcs (2 ea)	90-Start up Operation	SO 40061 5116380 56845 5022246
188-FPSS-1/4-20-3/8	Set Screw +	4 Ea (2 ea)	110-Small Fab	SO 48857
188-FPSS-1032-1/4P	Set Screw +	4 Ea (2 ea)	110-Small Fab	SO 48857 5110 495
20NR-11-2P	E-Clip p/n: 98408A126 +	4 Ea (2 ea)	110-Small Fab	SO 10653
20NR-15P	Plate Bushing +	8 Ea (4 ea)	110-Small Fab	SO 10653
20NR-19P	Actuator Shaft +	2 pcs (1 ea)	110-Small Fab	SO 29083
20NR-20P	Actuator Pin Long +	2 pcs (1 ea)	110-Small Fab	SO 29084
20NR-22P	Actuator Washer +	2 pcs (1 ea)	110-Small Fab	SO 29085
20NR-23P	Rubber Pad Solenoid Backing +	2 pcs (1 ea)	110-Small Fab	SO 29086
20NR-24	Latch Return Spring +	4 Ea (2 ea)	110-Small Fab	SO 10988
20NR-26	Round Bumper +	2 Ea (1 ea)	110-Small Fab	SO 14523
20NR-27P	Spring Holder Pin +	4 pcs (2 ea)	110-Small Fab	SO 29087
20NR-28P	Keeper Bolt +	8 pcs (4 ea)	110-Small Fab	SO 97648
20NR-33P	Keeper Lock Washer +	2 pcs (1 ea)	110-Small Fab	SO 29425
20NR-34P	Keeper Handle Screw +	2 Ea (1 ea)	110-Small Fab	SO 29092
20NR-38	Keeper Bushing +	2 Ea (1 ea)	110-Small Fab	SO 83908
20NR-39	Keeper Spring +	2 Ea (1 ea)	110-Small Fab	SO 83903
20NR-45P	Nut 1/2 +	12 pcs (6 ea)	110-Small Fab	SO 89099
20NR-56P	Spring Anchor +	2 pcs (1 ea)	110-Small Fab	SO 29105
20NR-57P	Circlip (Lock Roller Pin) +	4 pcs (2 ea)	110-Small Fab	SO 29105 5109087
20NR-60	Lock Bushing +	2 Ea (1 ea)	110-Small Fab	SO 36852
20NR-63	Bearing +	2 Ea (1 ea)	110-Small Fab	SO 84304
20NR-64P	Flat Bumper +	6 pcs (3 ea)	110-Small Fab	SO 116371
20NR-65P	Back Spacer Bumper Pin +	2 pcs (1 ea)	110-Small Fab	SO 29110
20NR-67P	Load Stop Return Spring +	2 pcs (1 ea)	110-Small Fab	SO 29427
20NR-68P	Light Release Spring +	2 pcs (1 ea)	110-Small Fab	SO 15496
20NR-69P	Light Release Pivot Shaft +	2 pcs (1 ea)	110-Small Fab	SO 10656
20NR-71P	Stop Pin +	2 Ea (1 ea)	110-Small Fab	SO 115702
600.1309-AP	Label	2 pcs (1 ea)	110-Small Fab	SO 29595
600.1325P	Solenoid Warning Sticker +	2 pcs (1 ea)	110-Small Fab	SO 29595
AN4-23A	Bolt +	6 Ea (3 ea)	110-Small Fab	SO FM133834-40
AN6-27A	AN6 Bolt +	2 Ea (1 ea)	110-Small Fab	SO 66941
MS21044N6	Nut, Self-Lock .375-24, UNJF-3B +	2 Ea (1 ea)	110-Small Fab	SO 99740
MS21083N4	Nut +	4 Ea (2 ea)	110-Small Fab	SO 62621
NAS1149F0432P	Washer +	4 Ea (2 ea)	110-Small Fab	SO 83558
NAS1149F0663P	Washer +	6 Ea (3 ea)	110-Small Fab	SO 51477

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	20NR-05P	2	41	0
	20NR-06P	2	0	0
	8NR-13P	8	20	0
	8NR-29P	4	20	0
	8NR-47P	2	9	0
	8NR-51P	2	27	0
	8NR-74P	8	6	0
	C10-9-2P	2	0	0
	C2-14-2P	4	22	0
	C2-3-2-1P	4	59	0
110-Small Fab	188-FPSS-1/4-20-3/8	4	194	0
	188-FPSS-1032-1/4P	4	0	0
	20NR-11-2P	4	32	0
	20NR-15P	8	0	0
	20NR-19P	2	8	0
	20NR-20P	2	6	0
	20NR-22P	2	58	0
	20NR-23P	2	38	0
	20NR-24	4	11	0
	20NR-26	2	1	0
	20NR-27P	4	264	0
	20NR-28P	8	17	0
	20NR-33P	2	723	0
	20NR-34P	2	46	0
	20NR-38	2	12	0
	20NR-39	2	13	0
	20NR-45P	12	17	0
	20NR-56P	2	14	0
	20NR-57P	4	3	0
	20NR-60	2	8	0
	20NR-63	2	20	0
	20NR-64P	6	3	0
	20NR-65P	2	35	0
	20NR-67P	2	10	0
	20NR-68P	2	13	0
	20NR-69P	2	10	0
	20NR-71P	2	0	0
	600.1309-AP	2	20	0
	600.1325P	2	100	0
	AN4-23A	6	570	0
	AN6-27A	2	100	0
	MS21044N6	2	72	0
	MS21083N4	4	260	0
	NAS1149F0432P	4	2,293	0
	NAS1149F0663P	6	827	0

Part Specifications

Specifications could not be found.

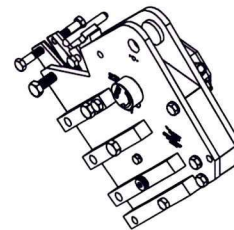
Plex 7/26/18 2:33 PM dart.white.jesse

This drawing, specifications, and concepts contained here in are the sole property of Dart Aerospace, and may not be reproduced or used in any fashion without the prior written permission of Dart Aerospace Eugene, OR.

REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		AS DRAWN BY CANAM.	8/1/2013	CFB	
2	15-0165	UPDATED TO NEW DRAFTING STANDARDS. 20NR-01 REPLACED W/ AN4-23A. 20NR-25 REPLACED W/ 188-FPSS-1032-1/4. 20NR-42 REPLACED W/ 188-FPSS-1/4 20-3/8. 20NR-52-3 REPLACED W/ AN760-416. 20NR-63 CHD R/O WAS 1/2-20 X 3 #91257A751 IS 1/2-20 X 3-1/4 #91257A745. 20NR-55 REPLACED W/ C2-3-2-1. 20NR-30 REPLACED W/ C10-9-1. 20NR-31 REPLACED W/ C10-9-2. 20NR-32 REPLACED W/ C10-9-3. 20NR-52-1 REPLACED W/ AN6-27A. 20NR-52-2 REPLACED W/ MS21044N6. 20NR-71 REPLACED W/ 400.1309. 20NR-92 REPLACED W/ C2-1-6-2. 20NR-110 REPLACED W/ MS21083N4. 20NR-111 REPLACED W/ AN760-416L. 20NR-114 REPLACED W/ AN760-816. 20NR-115 REPLACED W/ C10-41. 32444 REPLACED W/ 32448. 20NR-113 REPLACED W/ 600.1325. ADDED P/N 600.1309-A. ADDED REBUILD NOTES. ADDED ENGRAVING NOTE AND DETAIL.	7/21/2015	DPD	JAG

ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS
		B/O	C2-3-2-1	2	RETAINING RING 	STEEL	Ø5/16 (KAMAN #1400-0031)
		B/O	C2-14-2	2	LABEL RIVETS	18-8 S.S.	NO 4 (MCMASTER-CARR #91654A106)
			C10-9-1	1	LATCH	4140/4142	
		B/O	C10-9-2	1	LATCH BEARING		(TORKINGTON #6NBC914Y2P)
			C10-9-5	1	LATCH SHAFT	4140/4142	
		B/O	C10-41	1	STRAIN RELIEF CONNECTOR	BRASS	1/2 TRADE SIZE (MCMASTER-CARR #6907K14)
			20NR-02	1	SOLENOID COVER	ALUMINUM	
			20NR-04	1	SOLENOID ASSEMBLY		
		B/O	20NR-05	1	SOLENOID LOCATING PIN	S.S.	Ø1/4 X 3/8 (MCMASTER-CARR #90145A536)
		B/O	20NR-06	1	SOLENOID LOCATING PIN	S.S.	Ø3/16 X 3/8 (MCMASTER-CARR #90145A503)
			20NR-08	1	LIFTING BUSHING	4140/4142	
			20NR-09	1	SIDE PLATE - SOLENOID	4140/4142	
			20NR-10	1	SPACER	6061	
			20NR-11-1	2	STEP PIN	4140/4142	
		B/O	20NR-11-2	2	STEP PIN E-CLIP	S.S.	Ø3/16 (MCMASTER-CARR #98408A126)
		B/O	20NR-13	2	RAIL BOLT	STEEL	5/8-18 X 2-1/4 (MCMASTER-CARR #92620A592)
			20NR-14	2	LOAD RAIL	4140/4142	
		B/O	20NR-15	2	PLATE BUSHING	STEEL	O.D. Ø1-1/8 X I.D. Ø17/32 (MCMASTER-CARR #98029A033)
			20NR-16	1	LOAD STOP	4140/4142	
			20NR-17	1	LOAD STOP BUSHING	STEEL	Ø7/8 O.D X 1-5/8 (MCMASTER-CARR #8491A747) MODIFIED
		B/O	20NR-19	1	ACTUATOR PIN SHORT	S.S.	Ø1/4 X 1-1/2 (MCMASTER-CARR #97855A630)
		B/O	20NR-20	1	ACTUATOR PIN LONG	S.S.	Ø1/4 X 2 (MCMASTER-CARR #92383A754)
			20NR-21	1	ACTUATOR SHAFT	4140/4142	
		B/O	20NR-22	1	ACTUATOR WASHER	STEEL	Ø5/8 (MCMASTER-CARR #95229A610)
			20NR-23	1	RUBBER PAD SOLENOID BACKING	RUBBER	(MCMASTER-CARR #8609K48) MODIFIED
		B/O	20NR-24	2	LATCH RETURN SPRING	STEEL	Ø.25 OD X Ø.023 WIRE (MCMASTER-CARR #9654K519)
			20NR-26	1	ROUND BUMPER	POLYURETHANE	
		B/O	20NR-27	2	SPRING HOLDER PIN	S.S.	Ø3/16 X 1-1/2 (MCMASTER-CARR #90145A514)
		B/O	20NR-28	1	KEEPER BOLT	STEEL	1/2-20 X 3 (MCMASTER-CARR #91257A751)
			20NR-29	2	LATCH PIN BUSHING	4140/4142	
		B/O	20NR-33	1	LOCK WASHER KEEPER	S.S.	Ø1/4 (MCMASTER-CARR #90900A030)
		B/O	20NR-34	1	KEEPER HANDLE SCREW	STEEL	1/4-20 X 1-1/4 (MCMASTER-CARR #91253A544)
			20NR-35	1	KEEPER HANDLE	A-36	
			20NR-36	1	KEEPER HANDLE BLOCK	6061	
			20NR-37	1	KEEPER	4140/4142	
		B/O	20NR-38	1	KEEPER BUSHING	STEEL	Ø3/4 X 1 (MCMASTER-CARR #8491A462)
		B/O	20NR-39	1	KEEPER SPRING	STEEL	Ø.375 OD X Ø.035 WIRE (MCMASTER-CARR #9654K193)
			20NR-40	1	UPPER RAIL	A-36	
			20NR-41	1	MANUAL RELEASE KNOB	6061	
			20NR-43	1	SIDE PLATE - COVER	4140/4142	
			20NR-44	2	STIFFENER - 3 HOLE	4140/4142	
		B/O	20NR-45	5	NYLOCK NUT	STEEL	1/2-20 (MCMASTER-CARR #97135A255)
		B/O	20NR-46	1	5/8 NUT	STEEL	5/8-18 (MCMASTER-CARR #97135A275)
		B/O	20NR-47	1	SHOULDER BOLT	STEEL	1/2-13 X Ø5/8 X 4-1/2 (MCMASTER-CARR #91259A812)
			20NR-49	2	STIFFENER - 2 HOLE	4140/4142	
			20NR-50	2	STIFFENER - OFFSET HOLES	4140/4142	
		B/O	20NR-51	1	NUT FOR SHOULDER BOLT	STEEL	1/2-13 (MCMASTER-CARR #97135A250)
		B/O	20NR-53	3	BOLT	STEEL	1/2-20 X 3-1/4 (MCMASTER-CARR #91257A745)
			20NR-54	1	LOCK BEARING PIN	4140/4142	
			20NR-56	1	SPRING ANCHOR	STEEL	8-32 X 7/8 (MCMASTER-CARR #9634K22) MODIFIED
		B/O	20NR-57	2	CIRCLIP (LOCK ROLLER PIN)	STEEL	Ø3/8 (MCMASTER-CARR #97633A170)
			20NR-58	1	LOCK ROLLER PIN	4140/4142	
		B/O	20NR-59	2	PLATE BUSHING	STEEL	O.D. Ø1-3/8 X I.D. Ø21/32 (MCMASTER-CARR #98029A035)
		B/O	20NR-60	1	LOCK BUSHING	STEEL	Ø3/4 X 1-1/2 (MCMASTER-CARR #8491A738)
			20NR-61	1	LOCK	4140/4142	
			20NR-62	1	LOCK ROLLER	4140/4142	
		B/O	20NR-63	1	BEARING LOCK		Ø1 X 5/8 (MCGILL #CYR1-5)
			20NR-64	3	FLAT BUMPER	POLYURETHANE	
		B/O	20NR-65	1	BACK SPACER BUMPER PIN	S.S.	Ø1/8 X 1-1/2 (MCMASTER-CARR #90145A884)

ASSY QTY	ASSY QTY	B/O	Part #	UNIT QTY	Description	Material	B/O INFORMATION OR SPECIFICATIONS
			20NR-66	1	SIDE RAIL	1018/1020	
		B/O	20NR-67	1	LOAD STOP RETURN SPRING	STEEL	Ø.375 OD X Ø.035 WIRE (MCMASTER-CARR #9654K916)
		B/O	20NR-68	1	LIGHT RELEASE SPRING	STEEL	Ø.028 WIRE X 3-1/8 DENDOFF
		B/O	20NR-69	1	LIGHT RELEASE PIVOT SHAFT	S.S.	Ø1/4 X 1-1/2 (MCMASTER-CARR #90145A546)
			20NR-70	1	LIGHT RELEASE LEVER	4140/4142	
		B/O	20NR-71	1	STOP PIN	S.S.	Ø1/8 X 1 (MCMASTER-CARR #98380A475)
			20NR-72	1	LIGHT RELEASE PIVOT BUSHING	4140/4142	
			20NR-73	2	STIFFENER	4140/4142	
		B/O	20NR-74	2	BOLT	STEEL	5/8-18 X 5-1/2 (MCMASTER-CARR #91247A449)
		B/O	20NR-104	2	RAIL FUNNEL BOLTS	STEEL	1/2-20 X 2-1/4 (MCMASTER-CARR #91257A749)
		B/O	20NR-112	2	BOLT	STEEL	1/2-20 X 5-1/2 (MCMASTER-CARR #91257A758)
		X	20NR-117	1	WIRE ASSEMBLY		
		1	B/O	EL314-SJTOW	ELECTRICAL WIRE 3/14 SJTOW	(TEKCAN 314-SJTOW)	
		2	B/O	32448	16-14 AWG KNIFE CONNECTOR	(ALLIED ELECTRONICS #32448)	
		1	B/O	EL-PLUG-M	MALE PLUG	PE High Density	(MCMASTER-CARR #7216K5)
		1	B/O		HEAT SHRINK TUBE	RUBBER	(MCMASTER-CARR #2595K22)
			600.1309	1	LABEL 	ALUMINUM	
			600.1309-A	1	LABEL 	ALUMINUM	
		B/O	600.1325	1	SOLENOID WARNING STICKER 	VINYL	3/4 X 3 (SIGNS NOW)
		B/O	188-FPSS-1/4 20-3/8	2	SET SCREW	S.S.	1/4-20 (MCMASTER-CARR #92313A535)
		B/O	188-FPSS-1032-1/4	2	SET SCREW	S.S.	10-32 X 1/4 (MCMASTER-CARR #94355A330)
		B/O	AN4-23A	3	BOLT	STEEL	1/4-28 X 2.41
		B/O	AN6-27A	1	AN6 BOLT	STEEL	3/8-24 X 2.953
		B/O	AN760-416	3	WASHER	STEEL	Ø1/4
		B/O	AN760-416L	2	SOLENOID WASHER	STEEL	Ø1/4
		B/O	AN760-616	2	AN6 WASHER	STEEL	Ø3/8
		B/O	AN760-816	7	WASHER	STEEL	Ø1/2
		B/O	MS21044N6	1	AN6 NUT	STEEL	3/8-24
		B/O	MS21083N4	2	NYLOCK NUT	STEEL	1/4-28 LOW PROFILE
		ASSY	-117				



NOTES:

-  FOR REBUILD ONLY.
-  FOR CUSTOMER REBUILD ONLY.

DART AEROSPACE			
TITLE 20NR NUBBINS RECEIVER			
DWG NO. 20NR		REV 2	
MATERIAL UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES .XXX ± .005 .XX ± .01 .X ± .1		DRAWN BY: CANAM APPROVED:  DATE: 12/1/1995	
1. BREAK ALL SHARP EDGES .015 x 45° OR .015R 2. DIMENSIONAL LIMITS APPLY AFTER PLATING		SHEET 1 OF 4	



Dart Hawkesbury
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada
Tel (613) 632-5200
Fax 613 632-5246

Part Material Where Used

Part Material Where Used

Component Part: 97633A170 Material: Active Parents Only: ✓

Part No Revision	Part Status	Part Type	Quantity	Unit	Customer Part No
97633A170	Active	Hardware			
RBE350A94-2720-00	Active	Purchased Item	1.0000	Ea/Ea	RBE350A94-2720-00
RBE350A94-2720-00	Active	Purchased Item	1.0000	Ea/Ea	RBE350A94-2720-00
RBE350A94-2720-00	Active	Purchased Item	1.0000	Ea/Ea	RBE350A94-2720-00

Plex 9/28/2018 10:09 AM Dart.Lavoie.Chantal